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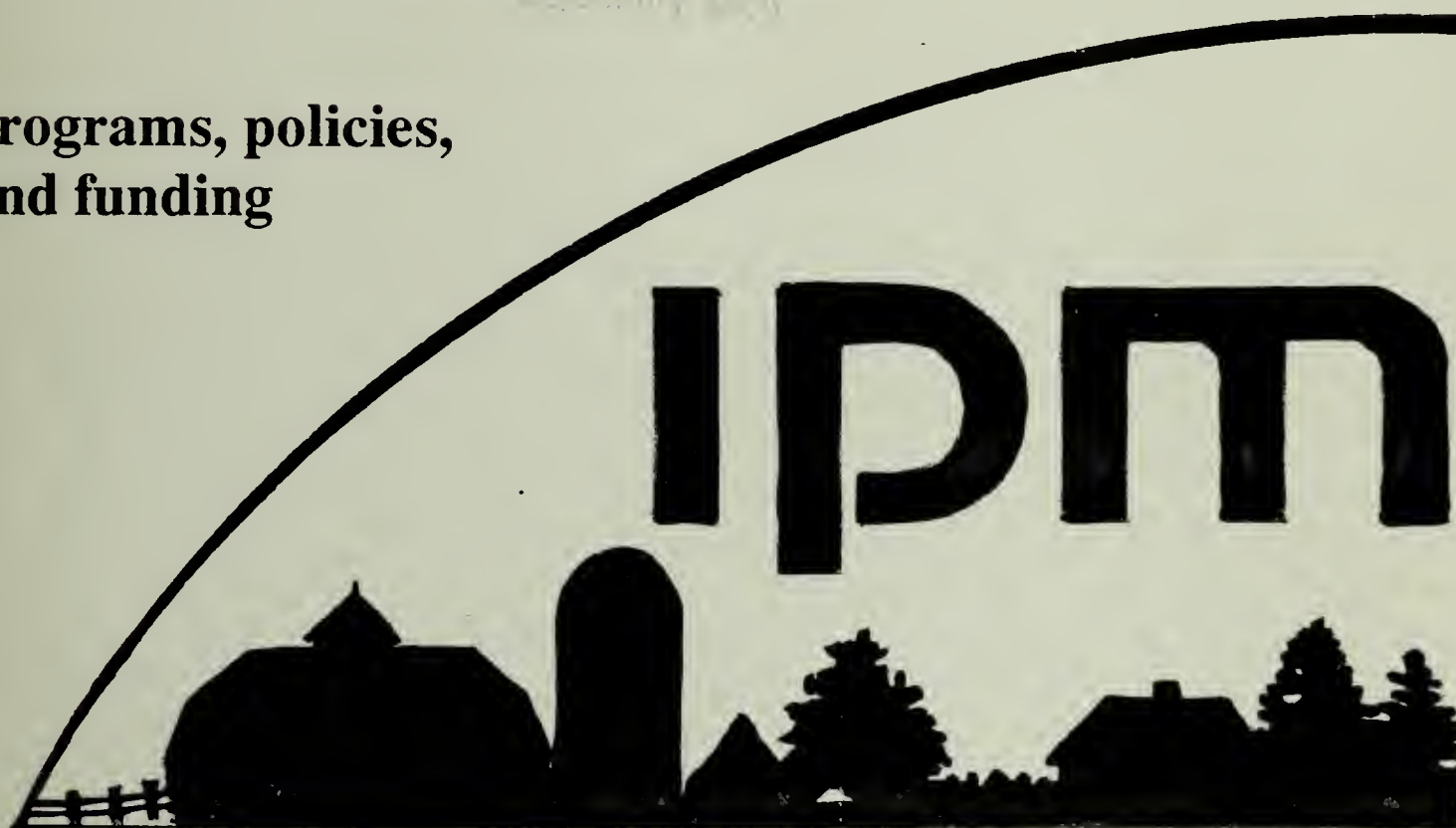
INTEGRATED PEST MANAGEMENT IN MASSACHUSETTS

GOVERNMENT DOCUMENTS
COLLEGE

FEB 08 1983

University of Massachusetts
Department of Agriculture

programs, policies,
and funding



MASSACHUSETTS DEPARTMENT
OF FOOD AND AGRICULTURE

James S. Hoyte,
Secretary of Environmental Affairs
August Schumacher, Jr.,
Commissioner of Food and Agriculture

COOPERATIVE EXTENSION
UNIVERSITY OF MASSACHUSETTS

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INTEGRATED PEST MANAGEMENT IN MASSACHUSETTS

A Cooperative Program of the Mass. Dept. of Food
and Agriculture and the University of Mass.

College of Food and Natural Resources

Programs, Policies and Funding

FY 88 Guidance

Massachusetts Department of Food and Agriculture

100 Cambridge Street, 21st Floor

Boston, MA 02202

July, 1987

* * * IMPORTANT NOTICE * * *

Problems at the printer's caused a delay in the production of this booklet which renders the time-frames mentioned on page four (paragraphs 1 and 3) obsolete.

Accordingly, the new deadlines are as follows:

Pre-Proposals due by December 31, 1987

Final selections by February 29, 1988



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CONTENTS

Executive Summary	Page 1
Background	Page 1
Current Initiatives	Page 2
Five Year Plan	Page 2
Competitive Bid Process	Page 4
FY88 Program Support	Page 5
Appendix I	Page 6
Appendix II	Page 7

FIVE YEAR PLAN FOR RESEARCH AND EXTENSION IMPLEMENTATION OF INTEGRATED PEST MANAGEMENT IN MASSACHUSETTS

Executive Summary

A comprehensive pesticide management plan for Massachusetts has been developed by the Department of Food and Agriculture to (1) improve the regulation of pesticides and (2) to reduce, and where feasible, develop alternative approaches to the use of the more toxic compounds applied by farmers and other pesticide users. An important element of this plan involves intensifying the development and implementation of Integrated Pest Management (IPM) programs and the research and development of biological control mechanisms and biotechnology.

The long term benefits of this program will be a reduction in the use of pesticides while sustaining the profitability of farms. This work would be mainly carried out through a cooperative agreement with the University of Massachusetts (Amherst) Integrated Pest Management Program operating through Cooperative Extension in the College of Food and Natural Resources. However, a significant portion of the funds will be earmarked for open competitive bidding to support innovative research and development programs by the agribiotech industry in Massachusetts, private IPM firms, non-profit agricultural research groups, educational institutions and related private individuals and firms.

Background

IPM programs implemented by the University of Massachusetts, Amherst since 1979 are systems-oriented educational efforts whose approach to crop production and pest management is interdisciplinary, involves an analysis of economic and environmental cost versus benefits, contains a mechanism for accurate pest population estimation and spray decision-making, uses biological control agents, techniques of sustainable agriculture and the 'least-is-best' pesticide strategy, so as to aid in the production of high yields of top quality agricultural products and improve farm profitability. IPM has also been highly successful in non-agricultural applications such as cockroach control and rights-of-way maintenance.

In Massachusetts, IPM programs use current research-based technology and information in support of overall program goals. Applicator training in areas such as sprayer calibration and groundwater protection is emphasized. A major emphasis is the production of high quality fact sheets, manuals and other training and decision-support aids.

In keeping with USDA's original intent, a component of the IPM educational effort is to train a core of private sector professionals who will be able to deliver IPM services to clients after the end of Extension-sponsored pilot programs. In Massachusetts, five (5) private companies are now offering IPM services (see Appendix I).

Current Initiatives

Massachusetts has on-going IPM programs in apples, cranberries, potatoes, turf, sweet corn and strawberries. In addition, programs emphasize training of applicators in proper calibration of equipment. These programs, which are being implemented by University of Massachusetts Cooperative Extension, are funded from a combination of federal, state and grower-group money. State funds expended in FY86 and FY87 totaled \$85,000 and \$165,000 respectively, while federal support has remained at approximately \$80,000.

In addition to funds provided for Cooperative Extension for implementation of IPM programs, the Department of Food & Agriculture has also funded a study by Van Driesche and Carey (Department of Entomology, University of Massachusetts) to evaluate the opportunities for biological control research with applications to existing or possible future IPM programs (\$7,700). Also, the Department has contracted with Genetics Institute of Cambridge, MA to develop a bacterial nematocide which the Department hopes will reduce the need to use chemical nematocides, major sources of groundwater contamination. Funds expended for this project totalled \$14,600 in FY 86 and \$114,000 in FY87.

Five grants were awarded in FY87 totaling \$85,000 to support biological control research and development. Awards were granted to: New Alchemy Institute, East Falmouth - Greenhouse; Small Farm Institute and the University of Massachusetts, Amherst - Organic Potato Culture; University of Massachusetts, Amherst - Potatoes and Apples; and Insect Management Service, Falmouth - Cranberries.

Five Year Plan

1. IPM Implementation in Cooperation with the Univ. of Mass., Amherst

By 1990, the Department is committed to a goal of reducing the use in Massachusetts of the most toxic pesticides by 25% and therefore minimizing the potential for adverse effects on human health or the environment. The success of the plan is dependent on continuing the cooperative relationship with the University of Massachusetts in implementing IPM and utilizing the resources and technical ability of the University and the biotechnical consulting firms and other educational institutions to carry out innovative research and development programs. From available funds, the Department will provide support through a Memorandum of Understanding with the University of Massachusetts for implementation of IPM programs. Emphasis will be put on ensuring the success of the existing programs as well as encouraging the development of private sector initiatives. The Department has identified the following as key priorities:

*CRANBERRIES

ORCHARDS AND VINEYARDS

Tree Fruits (*Apples, Peaches, Apricots, Pears) and Small Fruits
(*Strawberries, Grapes and Raspberries)

VEGETABLES

*Sweet Corn, *Potatoes, Cole Crops, Tomatoes and Peppers

STRUCTURAL PEST CONTROL

Cockroaches, Rodents and Termites

GREENHOUSES

Bedding Plants, Flowers (Cut and Potted), and Vegetable Plants,
especially Tomatoes and Peppers

NURSERY STOCK AND ARBORICULTURE

TURF MANAGEMENT

*Home lawns, municipal and golf course turf management

RIGHTS OF WAYS

Railroad Layouts and Utility Rights of Way

*Denotes existing IPM Programs

Program support decisions will be made jointly by the DFA and the IPM Steering Committee at the University of Massachusetts.

2. Dept. of Food & Agriculture Research and Development in Biological Control, Biotechnology and IPM Systems Competitive Grants

The development of biotechnology and biological controls are key elements of the Department's strategy. Basic research is needed where information is currently inadequate to develop IPM programs. It is anticipated that with adequate funding, alternative methods of pest control will become available which will eventually decrease reliance on pesticides. In order to take advantage of the knowledge and talent in both the private sector and in academia, projects will be funded via a competitive bid process, with emphasis on those projects which have application to current or possible future IPM programs, or which have the greatest potential to decrease pesticide use, increase cost effectiveness of control programs, minimize risk to public health and environment or which will contribute to maintaining sustainable agriculture in the Commonwealth. Emphasis will be placed on projects which can be readily assimilated into the interdisciplinary approach which characterizes Integrated Pest Management.

Program support decisions will be made by the Department utilizing an open competitive bid process similar to that used by the USDA.

Biological Control and Biotechnology Competitive Grants

Competitive Bid Process

Pre-proposals will be requested by the Department for submittal on or before November 15, 1987 unless otherwise specified. These pre-proposals shall be no more than four pages long and shall contain the following elements:

1. Purpose of research program
2. Major objectives
3. General approach
4. Qualification of researchers
5. Estimated funding needed and research timetable

Pre-proposals will be evaluated by a selection committee appointed by the Commissioner of Food and Agriculture. Requests for final proposals will be requested by the Department from those applicants whose proposals most closely conform to the intent of the program as described on Page 3. Final proposals must be submitted to the Department no later than thirty (30) days following notice by the Department. All proposals must be submitted in accordance with the attached format (see Appendix II).

Final selections will be made no later than December 31, 1987 unless otherwise notified by the Department. The review committee will evaluate all proposals using the following criteria:

- Potential to reduce pesticide use
- Probability of accomplishing objectives
- Utilization of interdisciplinary approach
- Potential to minimize risk to public health and environment
- General economic significance of crop or commodity
- Estimated cost effectiveness of control program
- Availability of matching funds
- Relationship to existing or future IPM programs
- Economic viability of control strategy
- Potential for lessening pesticide resistance problems
- Scientific merit of proposal

As a general rule, grants will be awarded on a two year basis but will be subject to yearly appropriations. Unless otherwise specified, grants will be awarded in January and will be valid for a period not to exceed 24 months.

FY88 Program Support

A specific goal of the Department in FY88 is the establishment within the Department of Entomology at the University of Massachusetts at Amherst of a biological control research position to provide greater ability to promote and coordinate biological control research activities within the Commonwealth and to assist in carrying out the recommendations of the 1987 report by Van Driesche and Carey "Opportunities for Increased Use of Biological Control in Massachusetts Agriculture."

The Department is anticipating a \$150,000 increase in funds to a total of \$400,000 in its FY88 budget for support of its initiatives in IPM implementation and biological or biotechnology research. In addition, \$50,000 is earmarked to continue development of the biological nematocide.

In recognition of the need to support implementation of existing IPM programs, \$210,000 will be made available to Cooperative Extension, University of Massachusetts, Amherst. Final decisions on program support will be made jointly by the Department and the statewide IPM Steering Committee.

One hundred twenty-five thousand dollars (\$125,000) will be available to support research and development in biological control, biotechnology and IPM systems via an open competitive bid process with an additional \$60,000 earmarked to fund a biological control research position at the University of Massachusetts. Grants will be from \$10,000 to \$35,000.

Five thousand dollars (\$5,000) will be used to carry out field trials on the biological nematocide and \$5,000 will be set aside to cover administrative costs of the program.

APPENDIX I.

IPM Consultants

ARCHOS INC.

URBAN IPM, Boston (Cockroaches, etc.)

Dr. Craig Alpert (617) 492-8621

BOSTON IPM, INC.

Tree Fruit, West Springfield

Clarence Boston III (413) 736-8404

DECRAN, INC.

Cranberries, Wareham

(Decas Brothers Cranberry)

Sheri Roberts (617) 295-0147

INSECT MANAGEMENT SERVICE, INC.

Vegetables, Greenfield

(primarily biological controls)

David Simser (413) 774-7171

NEW ENGLAND FRUIT CONSULTANTS

Tree Fruit, Montague

Glenn Morin and Dr. Roberta Spitko (413) 367-9578

APPENDIX II.

Competitive Grant Format Requirement

No proposals will be accepted by the Department unless they conform with the format that follows. This is intended to ensure that all proposals are assessed in an equitable manner as well as to allow for a more efficient process.

Title Page

Table of Contents (separate page)

Abstract (separate page)

Objectives

Rationale for Objectives

Methods

Previous Related Research

References Cited

Research Time Table

Budget

Budget Justification

